

ऑयल हॉयड्रोलिक कॅप्लिंग के लिए टेपर
मेल स्टैड टी बॉडी (स्टैड रन) — विशिष्टि

भाग 1 गढ़ाई से निर्मित

(पहला पुनरीक्षण)

**Taper Male Stud Tee Body
(Stud Run) for Oil Hydraulic
Couplings — Specification**

Part 1 Made from forgings

(First Revision)

ICS 23.100.40

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FOREWORD

This Indian Standard (Part 1) (First Revision) was adopted by the Bureau of Indian Standards after the draft finalized by the Fluid Power Systems Sectional Committee had been approved by the Production and General Engineering Division Council.

This standard covers taper male stud tee bodies (stud run) made from forgings only. The tee bodies made from bar stocks are covered in IS 10453 (Part 2).

Hydraulic fittings come in a wide range of types and applications. They are used to connect the hydraulic hose to components like hydraulic cylinders, pipes, tubes, or different types of hydraulic hoses in hydraulic systems. The different types of hydraulic fittings allow the fluid to flow, change its direction, divert, or mix. They are designed for high pressure applications and are leak proof and have high torque resistance. These fittings are widely used in hydraulic-powered applications including plumbing, robotics, assembly lines, and heavy equipment.

This standard was first published in 1983. The first revision has been taken up to keep pace with the latest technological developments and international practices. In this revision, following major changes have been made:

- a) Table 1 on dimensions has been revised;
- b) Clause on surface protection has been revised; and
- c) Clause on material has been revised.

The composition of the Committee, responsible for the formulation of this standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard***TAPER MALE STUD TEE BODY (STUD RUN) FOR OIL HYDRAULIC COUPLINGS — SPECIFICATION****PART 1 MADE FROM FORGINGS***(First Revision)***1 SCOPE**

This standard specifies the dimensions, material and other requirements for taper male stud tee bodies (stud run) made from forgings for use in oil-hydraulic systems.

2 REFERENCES

The standards listed below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standards listed below:

<i>IS No.</i>	<i>Title</i>
IS 554 : 1999/ ISO 7-11 : 1994	Pipe threads where pressure-tight joints are made on the threads — Dimensions, tolerances and designation (<i>fourth revision</i>)
IS 1367 (Part 11) : 2020/ ISO 4042 : 2018	Technical supply conditions for threaded steel fasteners : Part 11 Electroplated coating systems (<i>fourth revision</i>)
IS 1875 : 1992	Carbon steel billets, blooms, slabs and bars for forgings — Specification (<i>fifth revision</i>)
IS 8805 : 2002	General requirements for ferrule type couplings used in oil-hydraulic systems. (<i>first revision</i>)
IS 10480 : 1983	Stud run tee coupling assemblies for oil-hydraulic systems
IS 14962 (Part 2) : 2001/ ISO 965-2 : 1998	ISO general purpose metric screw threads — Tolerances: Part 2 Limits of sizes for general purpose external and internal screw threads — Medium quality

3 DIMENSIONS

The dimensions of taper male stud tee bodies shall be as given in Table 1.

4 MATERIAL

Taper male stud tee bodies shall be manufactured from steel of grade 15C8 (Class 1A) conforming to IS 1875 or any other steel as agreed to between the user/purchaser and the manufacturer.

5 SURFACE PROTECTION

Taper male stud tee bodies shall be zinc plated as per IS 1367 (Part 11), unless otherwise agreed to between the user/purchaser and the manufacturer.

6 GENERAL REQUIREMENTS

6.1 These taper male stud tee bodies are intended for assembly in accordance with Type A of IS 10480. For details not covered in this standard, reference shall be made to IS 8805.

6.2 Surface Roughness

All the machined surface taper male stud tee body shall have a surface roughness value, $R_a \leq 2.5$ micrometres (μm).

7 DESIGNATION

A taper male stud tee body of light series L, for outside diameter of tube 6 mm and conforming to this standard shall be designated as:

Stud Run Tee Body L6 IS 10453 (Part 1)

8 BIS CERTIFICATION MARKING

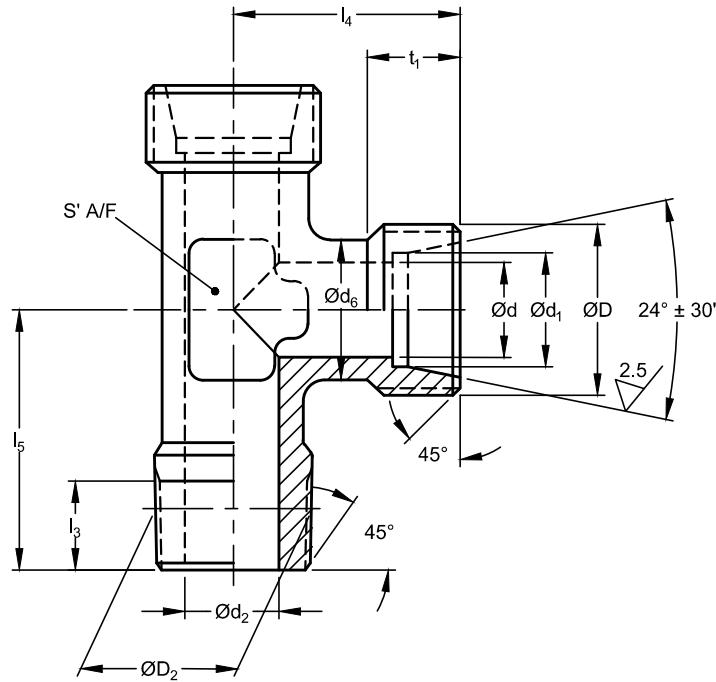
The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

Table 1 Dimensions for Taper Male Stud Tee Body (Stud Run)

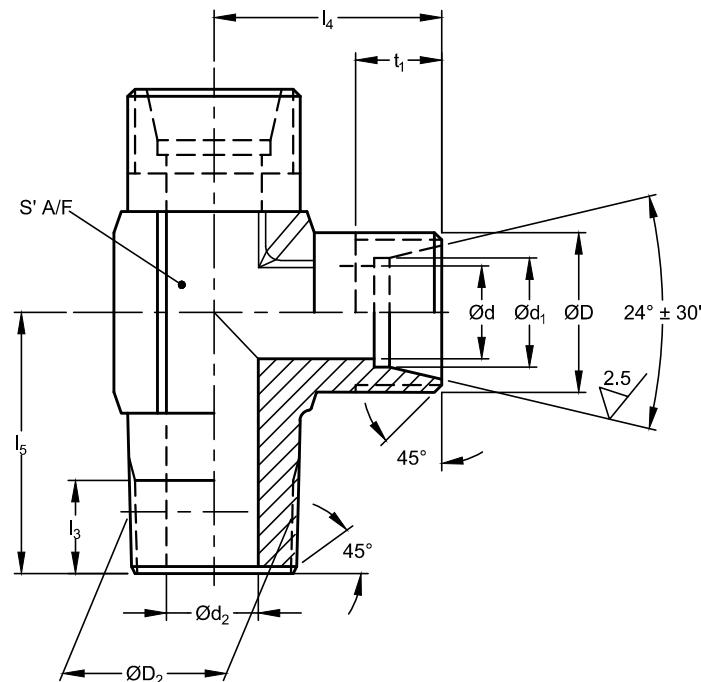
(Clause 3)

All dimensions are in millimeters.

FORGING WITH ROUND PROFILE



FORGING WITH HEX PROFILE



Sl No.	Series	Nominal Pressure MPa	Outside diameter of tube	$D^1)$	$D^2)$	d	d_1 B11	d_2	d_6	t_1 ± 0.2	l_3 ± 0.2	l_4 ± 0.3	l_5 ± 0.3	$S'A/F^3)$	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
i)	Very Light <i>LL</i>	10	4	M8 × 1.0	R_4^1	3	4	3.5	6.5	6	8	15	17	9	10
			6	M12 × 1.5	R_8^1	4	6	4	10.0	7	8	19	20	12	12
		25	8	M14 × 1.5	R_4^1	6	8	6	11.0	7	12	21	26	12	14
			10	M16 × 1.5	R_4^1	8	10	7	13.0	8	12	22	27	14	17
			12	M18 × 1.5	R_8^3	10	12	9	15.0	8	12	24	28	17	19
	Light <i>L</i>	16	15	M22 × 1.5	R_2^1	12	15	11	19.0	9	14	28	34	19	22
			18	M26 × 1.5	R_2^1	15	18	14	22.0	9	14	31	36	24	27
		40	6	M14 × 1.5	R_4^1	4	6	4	11.0	9	12	23	26	12	14
			8	M16 × 1.5	R_4^1	5	8	5	13.0	9	12	24	27	14	17
			10	M18 × 1.5	R_8^3	7	10	7	15.0	9	12	25	28	17	19
ii)	Heavy <i>S</i>	40	12	M20 × 1.5	R_8^3	8	12	8	17.0	9	12	29	28	17	22
			16	M24 × 1.5	R_2^1	12	16	12	22.0	11	14	33	32	24	24

¹⁾ Threads shall conform to class 6g of IS 14962 (Part 2).

²⁾ Threads shall conform to IS 554.

³⁾ For sizes up to and including 24 mm, tolerances shall be $^0_{-0.8}$ mm and for sizes larger than 24 mm, they shall be $^0_{-1}$ mm.

ANNEX A

(Foreword)

COMMITTEE COMPOSITION

Fluid Power System Sectional Committee, PGD 36

<i>Organization</i>	<i>Representatives(s)</i>
L&T Construction Limited, Bengaluru	SHRI SHIVA SHANKAR (<i>Chairperson</i>)
Ace Designers Limited, Bengaluru	SHRI T. P. SRIDHAR
BEML Limited, Bengaluru	SHRI A. SUBRAMANYAM SHRI V. SEKAR (<i>Alternate I</i>) SHRI S. BASAVARAJU (<i>Alternate II</i>)
Bosch Rexroth Indian Limited, Ahmedabad	SHRI MUKESH DODIYA SHRI PRASHANT KATKAR (<i>Alternate</i>)
Central Institute of Tool Design, Hyderabad	SHRI SHUJAYAT KHAN
Central Manufacturing Technology Institute, Bengaluru	DR NAGAHANUMAIAH SHRI S. K. VERMA (<i>Alternate</i>)
CSIR National Aerospace Laboratories, Bengaluru	SHRI THENNAVARAJAN S.
Denison Hydraulics India Limited, Patancheru, Hyderabad	SHRI V. G. SRIVIVAS SHRI S. RADHAKRISHNA (<i>Alternate</i>)
Duncan Engineering Limited, Pune	SHRI SHRIKANT RAO
Dynamitic Technologies Limited, Bengaluru	SHRI P. K. RAY CHAUDHURI SHRI VIVEK ANAND SUKUMARAN (<i>Alternate</i>)
Eastern Pneumatics Private Limited, Kolkata	SHRI SATYAJIT CHANGDURI SHRI JAYANTAA ROY (<i>Alternate</i>)
Eaton Technologies Private Limited, Pune	SHRI SHREEDHAR KETHARI SHRI B. A. N. MURTHY (<i>Alternate</i>)
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EPE Process Filters and Accumulators Private Limited, Hyderabad	SHRI NARENDRA GAURI SHRI P. N. BHAGAWATI (<i>Alternate</i>)
Festo India Private Limited, Bengaluru	SHRI R. JOSHI SHRI P. SHAH (<i>Alternate</i>)
Fluid Power Society of India (FPSI), Bengaluru	DR PRASANNA KUMAR SHRI M. YOGANARSIMHA (<i>Alternate</i>)
Hindustan Aeronautics Limited, Bengaluru	SHRI K. N. B. PANICKER

<i>Organization</i>	<i>Representatives(s)</i>
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Hyd-Air Engineering Private Limited, Mumbai	SHRI V. RANE
Hyfit Engineers, Faridabad	SHRI H. L. BHUTANI SHRI DHEERAJ BHUTANI (<i>Alternate</i>)
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Member Secretary
SHRI MONARCH JOSHI
SCIENTIST 'B'/ASSISTANT DIRECTOR
(PRODUCTION AND GENERAL ENGINEERING), BIS

Bureau of Indian Standards

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Amendments Issued Since Publication

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